

REMARKS

The Office Action dated April 7, 2004 has been received and carefully studied.

The Examiner newly rejects claims 1, 6, 9, 11 and 16 under 35 U.S.C. §102(b) as being clearly anticipated by Fuller, U.S. Patent No. 3,878,092. The Examiner states that Fuller discloses a housing or chromatographic column comprising sorptive particles bound to a polymer and chemically adhered or bound, e.g., covalently bound to the inner wall of the housing.

Fuller discloses a chromatographic column comprising a hollow member having a partitioning member comprising a crosslinked polymeric material bonded to an interior surface of the hollow member directly or through an intermediate film or coupling agent. The coupling agent bonds to the inner wall and to particulate material, which can be silica.

By the accompanying amendment, claims 1 and 11 have been amended to recite that the polymer is a precipitated inert polymer. Support for the amendment can be found at page 4, last line, page 5, last full paragraph, page 10, lines 3-4, page 11, first full paragraph, and page 15, lines 1-18, for example.

In accordance with the claims as amended, the present invention relates to a housing containing a structure that is either filled (with a plurality of sorptive particles) or unfilled, comprising a precipitated, inert polymer. Accordingly, in the case where the structures are filled, it is the particles

that provide the functionality to the structure. In the case where the structure is unfilled, no functionality is present, and the structure has application for size-based separations.

In contrast, the structure formed in the Fuller columns is polymerized and crosslinked *in situ*, not precipitated. Moreover, the resulting polymer is not inert, but rather contains the functionality necessary for chromatography. Accordingly, Fuller nowhere discloses or suggests the housing as now claimed.

The Examiner newly rejects claims 11-15 under 35 U.S.C. §102(e) as being anticipated by Hjerten et al., U.S. Patent No. 5,645,717. The Examiner states that Hjerten et al. disclose a housing or chromatographic column or pipette comprising adsorptive polymer adhered to the inner wall of the housing or pipette.

Hjerten et al. disclose chromatographic columns formed by the *in situ* polymerization of water-soluble monomers. Although chemical modification of the polymer is discussed, there is no disclosure reciting that the polymer is chemically adhered to the interior wall of the column. In addition, the polymer of Hjerten et al. is formed from the polymerization of monomers, and is not inert.

The Examiner rejects claims 1, 6-9 11, and 16-18 under 35 U.S.C. §103(a) as being unpatentable over Nochumson et al. '325 in view of Applicants' admissions, claims 3, 10 and 13 as being unpatentable over Nochumson in view of Applicants' admissions and further in view of Hagen et al. or Hilderbrandt et al., and claims

1-4, 11, 12, 14 and 15 as being unpatentable over White '811 in view of Applicants' admissions. The Examiner admits that Nochumson et al. and White do not teach chemical bonding to the inner wall of the housing, but states that Applicant admits that chemical bonding to the housing is known.

By the accompanying amendment, claims 1 and 11 have been amended to recite that the structure is chemically self-adhered to the interior wall of the housing. Support for the amendment can be found at page 9, lines 16-18, page 11, lines 1-16, and page 12, lines 11-20, for example.

The passage referred to by the Examiner as Applicants' admission reads as follows:

"Adhesion to the housing can be enhanced or an analogous effect achieved with these composite structures by means known to those skilled in the art, including etching of the housing, such as with plasma treatment or chemical oxidation; mechanical aids such as rims inside the housing; and inclusion of additives into the housing material that promote such adhesion."


Thus, this passage states that adhesion can be enhanced or analogous effects can be achieved by means known to those skilled in the art; it does not state or even imply that chemical self-adhesion is known.

The remaining prior art is believed to have been properly not relied upon in rejecting any claim.

Reconsideration and allowance are respectfully requested in

view of the foregoing.

Respectfully submitted,


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Amendments to the claims

This listing of claims replaces all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently amended) A housing having an interior wall, said housing containing a structure comprising a plurality of sorptive particles bound to a precipitated, inert polymer chemically self-adhered to said interior wall.

2. (Original) The housing of claim 1, wherein said housing has a first open end and a second open end spaced from said first open end, and wherein said structure is contiguous with said second open end.

3. (Original) The housing of claim 1, wherein said housing defines a volume, and wherein said structure occupies about 0.1 microliters to about 10 microliters of said volume.

4. (Original) The housing of claim 1, wherein said housing is a pipette tip having a first end and a second end spaced from said first end with said structure in between.

5. (Original) The housing of claim 4, wherein said first end has an internal diameter larger than the internal diameter of said second end.

6. (Original) The housing of claim 1, wherein said polymer is selected from the group consisting of polysulfone, polyethersulfone, polytetrafluoroethylene, cellulose acetate, polystyrene, polystyrene/acrylonitrile copolymer and PVDF.

7. (Original) The housing of claim 6, wherein said polymer is polysulfone, and wherein said housing comprises a polyolefin.

8. (Original) The housing of claim 7, wherein said polyolefin is polypropylene.

9. (Original) The housing of claim 1, wherein said particles are selected from the group consisting of polystyrenedivinylbenzene beads, functionalized polystyrenedivinylbenzene beads, silica, fumed silica, derivitized silica and activated carbon.

10. (Original) The housing of claim 1, wherein said particles are derivitized silica.

11. (Currently amended) A housing having an interior wall, said housing containing a structure comprising an adsorptive, precipitated, inert polymer chemically self-adhered to said interior wall.

12. (Original) The housing of claim 11, wherein said housing has a first open end and a second open end spaced from said first open end, and wherein said structure is contiguous with said second open end.

13. (Original) The housing of claim 11, wherein said housing defines a volume, and wherein said structure occupies about 0.1 microliters to about 10 milliliters of said volume.

14. (Original) The housing of claim 11, wherein said housing is a pipette tip having a first end and a second end spaced from said first end with said structure in between.

15. (Original) The housing of claim 14, wherein said first end has an internal diameter larger than the internal diameter of said second end.

16. (Original) The housing of claim 11, wherein said polymer is selected from the group consisting of polysulfone, polyethersulfone, polytetrafluoroethylene, cellulose acetate, polystyrene, polystyrene/acrylonitrile copolymer and PVDF.

17. (Original) The housing of claim 16, wherein said polymer is polysulfone, and wherein said housing comprises a polyolefin.

18. (Original) The housing of claim 17, wherein said polyolefin is polypropylene.